Air Pollution Control District
Jefferson County, Ky
4 April 2003

TITLE V PERMIT SUMMARY

Company: E. I. DuPont de Nemours & Co., Inc.

Plant Location: 4200 Camp Ground Road, Louisville, KY 40216

Date App. Received: 21 April 1997

Date Admin. Complete: 20 June 1997

Date of Draft Permit: 24 September 2000
10 December 2000
28 January 2001

Date of Proposed Permit: 30 November 2000
28 January 2001
11 June 2001

District Engineer: Patrick Schmidt

Permit No.: 160-97-TV

Plant ID: 0062 **SIC Code:** 2819 **NAICS:** 325188 & 325199 **AFS:** 00062

Introduction:

This permit will be issued pursuant to: (1) District Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as of the date above as an attainment area for lead (Pb), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), and particulate matter less than 10 microns (PM_{10}); unclassifiable for particulate matter less than 2.5 microns ($PM_{2.5}$); and is a moderate non-attainment area for ozone (O_3).

Application Type/Permit Activity:

[X] Initial Issuance
[ ] Permit Revision
- [ ]Administrative
- [ ]Minor
- [ ]Significant

[ ] Permit Renewal

Compliance Summary:

[X] Compliance certification signed [ ] Compliance schedule included
[ ] Source is out of compliance

I. Source Description

1. Class I Area Impacts: This source is not located in or near a Class I area.

2. Product Description: E. I. DuPont de Nemours & Co., Inc. manufactures chlorodifluoromethane (Freon® 22, CHClF2, or F22), trifluoromethane (Freon® 23, CHF3, or F23), 1,1-difluoroethane (HFC-152a or DFE), and vinyl fluoride (VF) under SIC code 2869 and hydrochloric acid (HCl) under SIC code 2819.

3. Overall Process Description: E. I. DuPont de Nemours & Co., Inc. operates 6 emission units at this site. Two gas/oil fired boilers supply steam to E. I. DuPont de Nemours & Co., Inc. and Dupont Dow Elastomers L.L.C. 1,1-Difluoroethane is produced from the reaction of acetylene and hydrogen fluoride. Chlorodifluoromethane is produced from reacting chloroform and hydrogen fluoride with trifluoromethane produced as a byproduct. Anhydrous hydrogen chloride is also produced as a byproduct and is absorbed in water to produce hydrochloric acid. A gasoline dispensing facility is operated for company vehicles. Vinyl fluoride is produced from 1,1-difluoroethane.

4. Site Determination: E. I. DuPont de Nemours & Co., Inc. owns the Dupont Fluoroproducts processes covered in this permit and owns 50% of Dupont Dow Elastomers L.L.C. which is covered in a separate permit. It has been determined per a November 25, 1997 letter from Steven Riva, EPA that these companies are under common control and are one source for Title V applicability purposes. However, the companies operate separately and will operate under separate Title V permits.

5. Emission Unit Summary:

U1- Powerhouse: E. I. DuPont de Nemours & Co., Inc. operates two natural gas boilers, with #2 fuel oil as a backup, constructed in December 1994 with maximum rated heat input capacities of 174 MMBtu/hr each. The boilers are equipped with low NO_x burners. Refrigeration unit #27, using SUVA-134a as the refrigerant, and a #2 fuel oil tank constructed in 1974 are also operated by the company.

The refrigeration unit is subject to 40 CFR 82 Subpart F Recycling and Emissions Reduction since it uses chlorodifluoromethane, a Class II refrigerant. Chlorodifluoromethane is not a VOC. SUVA 134a is not a Class I or Class II refrigerant or VOC. APCD does not have Title VI authority so these points are not included in the Title V permit.

U2- DFE Process: Hydrogen fluoride is received by railcar and is kept in the railcar until it is unloaded for direct use in a process. Vapors from hydrogen fluoride unloading and storage are controlled by a water scrubber. Acetylene received by pipeline from Carbide Graphite Group is compressed and reacted with hydrogen fluoride to produce 1,1-difluoroethane. The difluoroethane is scrubbed to remove acid impurities and dried. It then is either fed directly to the vinyl fluoride process or compressed and stored until shipped. Vent gases from this process are controlled by a jet scrubber and an emergency scrubber.

U3- Freon 22/F23: Chloroform is received by pipeline and stored in a controlled storage tank. A second tank is used as surge container. Both are controlled by a single refrigerated condenser. From the storage tank, the chloroform is pumped to a reactor and reacted with hydrogen fluoride to produce chlorodifluoromethane (F22) as the primary product and trifluoromethane (F23) and anhydrous hydrogen chloride as byproducts. The products and byproducts are separated and the F22 and F23 are stored until loaded and shipped. The process is controlled by a chlorine scrubber and an Emergency Vent Scrubber system. The Emergency Vent Scrubber System consists of two scrubbers, one controlling vent streams that may contain chloroform and the other controlling vent streams that do not contain chloroform.

Emission points 3003 3004, 3005, 3006, 3007, 3008, 3010, 3011, 3012 are subject to 40 CFR 82 Subpart F Recycling and Emissions Reduction since this unit produces chlorodifluoromethane (F22) as the primary product and trifluoromethane (F23) as a byproduct. APCD does not have Title VI authority, but these points are included in the Title V permit.

U4- HCl: Anhydrous hydrogen chloride gas, from the Freon 22/F23 process is absorbed in water to produce hydrochloric acid, stored in fixed roof tanks and shipped by railcar. Fumes from absorption, storage, and loading are controlled by a fume scrubber.

U5- Gasoline Dispensing: A gasoline refueling operation including one 1000 gallon tank installed in 1992.

U6- VF Process: Difluoroethane is reacted to form vinyl fluoride and hydrogen fluoride. A natural gas fired process heater supplies molten salt used to maintain the reactor temperature. The gaseous reaction products are separated and the hydrogen fluoride and difluoroethane are recycled back to the DFE process. The crude vinyl fluoride is purified and stored until shipped by railcar or truck tanker. Acidic vent gases from this process are controlled by the emergency scrubber of the DFE process.

U7- Non-halogenated cold solvent parts cleaner

6. **Fugitive Sources:** Fugitive emissions from the DFE process, HCL process and the VF process, are regulated by Regulation 6.39 Standard of Performance for Equipment Leaks of Volatile Organic Compounds in Existing Synthetic Organic Chemical and Polymer Manufacturing Plants which adopts 40 CFR 60 Subpart VV Standards of Performance for Equipment Leaks of Volatile Organic Compounds in the Synthetic Organic Chemical Manufacturing Industry by reference, but Regulation 6.39 includes all existing facilities as well as new facilities. Fugitive emissions of VOCs from the F22/F23 process are regulated by 40 CFR 63 Subpart H National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks.

7. **Title V Major Source Status by Pollutant:**

Pollutant	Actual Emissions (tpy) 1999 Data	Major Source Status (based on PTE)
CO	41.00	Yes
NO_x	84.8	Yes
SO_2	Negligible	No
PM	Negligible	Yes *
VOC	15.44	Yes *
Single HAP (> 1 TPY)		
Hydrogen fluoride	10.62	Yes
Hydrogen chloride	7.8	Yes *
Total HAPs	19.32	Yes *

* This site is a major source for these pollutants only when combined with Dupont Dow Elastomers L.L.C. emissions.

8. MACT Standards: This facility is major for organic HAPs when organic HAP emissions from E. I. DuPont de Nemours & Co., Inc. and Dupont Dow Elastomers L.L.C. are combined and is subject to:

40 CFR 63 Subpart F National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

40 CFR 63 Subpart G National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

40 CFR 63 Subpart H National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

It may in the future be subject to proposed MACT standards for Hydrogen Fluoride Production, if applicability is not limited to sites that produce HF but includes sites which use it in processes, and the Industrial Combustion Coordinated Rule covering industrial boilers.

9. Applicable Requirements:

[ ] PSD	[X] NSPS	[X] SIP	[ ] Other
[ ] NSR	[X] NESHAPS	[X] District-Origin	[X] MACT

The District has reviewed all construction, reconstruction, and modifications to determine PSD/Non-attainment NSR applicability to this source. There has been two construction, reconstruction, or modifications that triggered the significant levels listed

in Regulation 2.04, *Construction or Modification of Major Sources in or Impacting upon Non-Attainment Areas (Emission Offset Requirements)*, and Regulation 2.05, *Prevention of Significant Deterioration of Air Quality* and the source netted-out for both projects. Therefore, the District has determined that PSD/Non-attainment NSR does not apply to this source.

10. Referenced Federal Regulations in Permit:

40 CFR 60 Subpart A General Provisions

40 CFR 60 Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60 Subpart K Standards of Performance for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973 and Prior to May 19, 1984

40 CFR 63 Subpart A General Provisions

40 CFR 63 Subpart F National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

40 CFR 63 Subpart G National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

40 CFR 63 Subpart H National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

40 CFR 68 Chemical Accident Prevention Provisions

40 CFR 82 Protection of Stratospheric Ozone Subpart A Production and Consumption Controls

40 CFR 82 Protection of Stratospheric Ozone Subpart F Recycling and Emissions Reduction.

II. Regulatory Analysis

1. Emission and Operating Caps: The source is not subject to any plant-wide emission or operating caps.

2. Compliance Status: The source signed and submitted a Title V compliance certification in its permit application.

3. Operational Flexibility: The source did not request to operate under any alternative operating scenarios in its Title V permit application.

4. Testing Requirements: None at this time.

5. Monitoring, Recordkeeping and Reporting Requirements: The source is required to monitor, maintain records of, and report on various operating parameters to demonstrate compliance with all applicable requirements. Compliance reporting is required semi-annually, except where underlying regulations or permit conditions require more frequent reporting. Periodic monitoring is accomplished on the boilers (U1) by using a CEM. Periodic monitoring on the other units is accomplished by monitoring and recordkeeping requirements that are specified in the permit.

6. Off-Permit Documents:

1.18 Rule Effectiveness plan dated September 20, 1994
Risk Management Plan dated June 16, 1999

The District considers an "off-permit document" as a document on which a source's compliance with given regulation(s) is contingent or which contains regulatory requirement(s), but is only referenced in a source's Title V Operating Permit. The designation "off-permit document" shall be made at the District's discretion, and may include, but not be limited to, documents such as Regulation 1.05 VOC compliance plans, PMPs, MOCS; or other documents which are too voluminous to be included in a source's Title V Operating Permit, as determined by the District.

III. Other Requirements

1. Temporary Facilities: The source did not request to operate any temporary facilities.

2. Short Term Activities: The source did not report any short term activities.

3. Compliance Schedule/Progress Reports: The source has certified compliance with all applicable requirements; therefore, no compliance schedule or progress reports are necessary.

4. Emissions Trading: None

5. Acid Rain Requirements: The source is not subject to the Acid Rain Program.

6. Stratospheric Ozone Protection Requirements: Title VI of the CAAA regulates ozone depleting substances and requires a phase out of their use. This rule applies to any source that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. E. I. DuPont de Nemours & Co., Inc. produces chlorodifluoromethane (R22) and currently uses chlorodifluoromethane and SUVA 134a as refrigerants in process refrigeration machines. Chlorodifluoromethane is a Class II refrigerant under Title VI and the source shall comply with all applicable Title VI requirements of 40 CFR Part 82 Protection of Stratospheric Ozone Subpart A, Production and Consumption Controls and 40 CFR 82 Protection of Stratospheric Ozone Subpart F, Recycling and Emissions Reduction. SUVA 134a is not a Class II or Class I

refrigerant and is not regulated by Title VI. The District does not have Title VI authority.

7. **Prevention of Accidental Releases 112(r):** E. I. DuPont de Nemours & Co., Inc. stores and processes difluoroethane and vinyl fluoride in excess of the 10,000 pound threshold quantity, chloroform in excess of the 20,000 pounds threshold quantity, boron trifluoride in excess of the 5,000 pounds threshold quantity, anhydrous hydrogen chloride in excess of the 5,000 pounds threshold quantity, chlorine in excess of the 2,500 pounds threshold quantity, and hydrogen fluoride (at greater than 50% concentration) in excess of the 1,000 pounds threshold quantity, and therefore, is required to comply with 40 CFR 68 Chemical Accident Prevention Provisions Subpart G Risk Management Plan and Regulation 5.15 Chemical Accident Prevention Provisions. A plan was received on June 16, 1999.

8. **Insignificant Activities:** The following activities identified in the Title V permit application have been determined by the District to be insignificant.

Insignificant Activities		
Description	**Quantity**	**Basis**
Research and Development activities	1	Regulation 2.02, section 2.3.27
Internal combustion engines	various	Regulation 2.02, section 2.2
Brazing, soldering or welding equipment	various	Regulation 2.02, section 2.3.4
Woodworking, not including hogging or burning	various	Regulation 2.02, section 2.3.5
Emergency relief vents and ventilating systems (not otherwise regulated)	various	Regulation 2.02, section 2.3.10
Lab ventilating and exhausting systems for nonradioactive materials	1	Regulation 2.02, section 2.3.11
Laundry	1	Regulation 2.02, section 2.3.3
Portable diesel or gasoline storage tanks	1	Regulation 2.02, section 2.3.23

A. Insignificant Activities are only those activities or processes falling into the general categories defined in Regulation 2.02, Section 2, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained

in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.

B. Activities identified In Regulation 2.02, Section 2, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the Title V permit.

i. No facility, having been designated as an insignificant activity, shall be exempt from any generally applicable requirements which shall include a 20% opacity limit for facilities not otherwise regulated.

ii. No periodic monitoring shall be required for facilities designated as insignificant activities.

C. The Insignificant Activities table is correct as of the issuance date of the permit. The company is required to submit an updated list of insignificant activities annually with the Title V compliance certification.